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## CHAPTER – 5

### ANALYSIS OF ERC AND TARIFF FILING OF MESCOM

#### 5.0 Proposal of MESCOM in the ERC / Tariff filing for FY06:

MESCOM in their ERC for FY06 have requested the Commission to approve ARR of Rs.1942.88Cr. for FY06. The revenue at existing tariff for FY06 is Rs. 1540.66 Crs. and MESCOM has proposed tariff revision to an extent of 12.11% to bridge the revenue gap of Rs. 199.20 Crs.

#### 5.1 Compliance to Directives and Performance of MESCOM

The Commission has issued several directives to MESCOM and the compliance to these directives is enclosed at **Annexe-3**. The performance of MESCOM in the areas of Computerisation and MIS, Metering, transformer failures, accidents, collection performance, cost coverage and energy audit is discussed here under:

##### 5.1.1 Computerisation and MIS

MESCOM has stated that:

- a. Computerisation of DCB & billing system is ventured on a pilot basis in one sub-division each of Mangalore and Shimoga.
- b. Work order has been placed by MESCOM for the work of Total Revenue Management Services to service providers in 24 O & M sub-divisions.
- c. MESCOM has developed Corporate Performance Reporting System consisting of modules for Commercial & Financial reporting, Regulatory reporting and Energy balance sheet module.
- d. Stores Material Management System is developed and implemented by MESCOM.

The Commission notes that there is slow progress in computerisation and MIS in MESCOM.

### 5.1.2 Metering

- As per the EA 2003, no installations should be supplied with electricity without a correct meter. MESCOM has already undertaken universal metering programme from 2002 itself as per the policy directive of GoK. The progress of metering in MESCOM as per the information available with the Commission is as below:

**Table-5.1**

**Progress of metering in MESCOM**

Category	No of installations existing as on 31.03.2005	Number of installations for which meters are fixed as on 31.03.2005	Percentage of progress
IP sets	320310	174483	54.47%
BJ/KJ installations	223018	112176	50.29%
Street Lights	19672	11021	56.02%

- The Commission appreciates the progress of MESCOM in providing meters to IP sets** but at the same time notes that 100 % metering of installations is yet to be done to comply with the requirement of the Electricity Act to provide meters to all the installations within two years of the appointed date.

Regarding DC/MNR installations under metered category, the status in MESCOM is as indicated below:

	<u>% of DC &amp; MNR Installations</u>
4 <sup>th</sup> quarter of 2004:	2.22%
4 <sup>th</sup> quarter of 2005:	1.05%

**The Commission appreciates the efforts of MESCOM in reducing the DC/MNR installations.**

### 5.1.3 Transformer Failure Rate

As per the information available with the Commission, the distribution transformer failure rate in FY05 is 18.86% as against 17.81% in FY04. The Commission notes with concern that the failure rate of transformers has increased indicating that more efforts are required to bring down the failure rate.

### 5.1.4 Accidents

Review of electrical accidents in MESCOM indicates that total accidents have increased from 255 in FY04 to 355 in FY05. The Commission further notes that fatal accidents(to human beings) have increased from 53 in FY04 to 92 in FY05 accounting for 74% increase. The Commission notes that fatal accidents have increased in MESCOM and is a matter of serious concern requiring immediate action by MESCOM.

### 5.1.5 Revenue Collection performance

The following is the summary of collection performance of MESCOM based on the DCB furnished to the Commission:

**Table-5.2**

#### Collection Performance

In Rs. crores

Year	Revenue Demand	Collection	Collection as a percentage of Current year Demand
<b>FY02</b>	1036.36	935.48	90.27%
<b>FY03</b>	1191.49	1127.49*	94.63%
<b>FY04</b>	1321.68	1166.54	88.26%
<b>FY05</b>	1455.70	1486.91**	102.14%

\*with BRP Adjustments

\*\* Includes waiver of IP set arrears.

### 5.1.6 Cost Coverage

The cost coverage in MESCOM for the last 3-years is as indicated below:

**Table – 5.3**  
**Cost Coverage**

Year	Input to MESCOM [MU]	Energy Sales [MU]	Average Power Purchase cost Rs/Unit	Average cost of supply Rs/Unit	Demand per Unit [Revenue demand/energy sales] Rs./Unit	Realisation/unit on Energy input [Collection/energy input] [Rs./unit]
FY03*	5335	4091	2.19	3.54	2.96	2.11
FY04**	5697	4508	2.17	3.42	2.91	2.05
FY05***	5994	4705	2.28	3.60	3.06	2.48

\*As per ERC filing

\*\* Annual Accounts

\*\*\*Provisional

From the above table it may be seen that while in FY03 & FY04 the realisation rate is not adequate to cover the power purchase rate, there is a considerable gap between average cost of supply and the revenue demand in all the years.

### 5.1.7 Energy Audit

1. The Commission is monitoring the losses in the 11 towns/cities on a monthly basis. The losses in the 11 towns /cities is indicated as under:

**Table-5.4**  
**Loss in 11 towns/cities of MESCOM**

Towns	Input to Town in MU	Metered Sales in MU	Metered Sales in %	Un-meter sales in MU	Unmetered sales %age	Total Sales in MU	Loss in %
MANGALORE	331.11	288.29	87.07	6.80	2.05	295.09	10.88
UDUPI	116.06	100.39	86.50	1.60	1.38	101.99	12.12
SHIMOGA	111.99	97.05	86.66	2.69	2.40	99.74	10.94
BHADRAVATHI	54.45	46.82	85.99	2.58	4.73	49.40	9.28
SAGAR	15.17	12.08	79.62	0.90	5.93	12.98	14.46
CHIKMAGALUR	34.67	25.59	73.81	3.10	8.94	28.69	17.25

Towns	Input to Town in MU	Metered Sales in MU	Metered Sales in %	Un-meter sales in MU	Unmetered sales %age	Total Sales in MU	Loss in %
MYSORE	406.22	334.83	82.43	15.60	3.84	350.43	13.73
HASSAN	51.89	38.71	74.61	5.88	11.34	44.60	14.05
MANDYA	36.01	26.76	74.32	2.63	7.30	29.39	18.38
C.RAJANAGAR	15.25	8.32	54.57	4.53	29.66	12.85	15.77
KOLLEGAL	14.83	8.83	59.55	3.77	25.44	12.61	15.01
Total	911.50	756.58	83.00	41.29	4.53	797.87	12.47

2. The Commission notes that in MESCOM out of the 11 towns, the losses are more than 15% in 4 towns/cities. The Commission appreciates the efforts of MESCOM in achieving the loss reduction target in 7 towns/cities and directs MESCOM to initiate necessary action to reduce loss level to 15% in the remaining towns/cities in FY06 and ensure that the losses in the towns/cities where target has been achieved, are further reduced/at least maintained at FY05 level.

## 5.2 Objections

A summary of the objections received and the responses from MESCOM are discussed separately in **Annexe-2**.

## 5.3 Commission's Analysis of ERC/Tariff Filing

### 5.3.1 Financial Year 2004 in Retrospect

1. The Commission had approved the ERC of MESCOM for FY04 in the Tariff Order dated 10.03.2003. Subsequently KPTCL/ESCOMs applied for amendment of tariff arising out of additional power purchase cost due to change in Hydro-thermal mix. The Commission issued a Tariff Amendment Order on 15.12.2003 approving the BST from 193.57 paise per unit to 209.35 paise per unit for supply of electricity to ESCOMs /Hukkeri Society. The revised BST came into effect from 01.01.2004. Consequent to this change in BST, the Commission in the said Order revised the retail tariff for LT2b- Pvt. Professional & other Pvt.

Educational Institutions, LT3- Commercial, LT5- Industries, HT2a- Industries and HT-2b- Commercial categories.

- MESCOM has furnished the audited annual accounts for FY04 and as such the Commission would consider the same for the purpose of finding out the actual gap for FY04. The differences between the approved ERC figures and the actuals are as indicated below:

**a) Sales forecast**

- MESCOM had estimated sales of 4262 MU against which the Commission had approved sales of 4436 MU, which included additional metered sales of 107 MU due to efficiency improvements. The Actual Sales as per Audited Accounts is 4507 MU. The category wise sales approved and actuals as per audited accounts are indicated below:

**Table-5.5**

**Approved Energy sales and actual sales for FY04**

(Million Units)

Category	Approved as per ERC (1)	Actuals as per audited accounts (2)	Difference (2) – (1)
Bhagya Jyothi	91	54	-37
Domestic Lighting	967	931	-36
Commercial	180	174	-6
IP Sets unmetered (up to 10 HP) LT-4 a, b & d	1407	1606	199
IP sets –LT-4c	3	2	-1
LT Industries	223	214	-9
Water Supply-LT	138	137	-1
Street Lights	128	137	9
Temporary	6	6	0
<b>LT -Total</b>	<b>3143</b>	<b>3261</b>	<b>118</b>
HT- Water supply	219	276	57

<b>Category</b>	<b>Approved as per ERC (1)</b>	<b>Actuals as per audited accounts (2)</b>	<b>Difference (2) - (1)</b>
HT- Industries	843	842	-1
HT- Commercial	114	111	-3
HT-Irrigation	2	1	-1
HT- Residential	8	16	8
<b>HT-Total</b>	<b>1186</b>	<b>1246</b>	<b>60</b>
<b>Additional metered sales due to efficiency improvement</b>	<b>107</b>	<b>-</b>	
<b>Metered Sales including additional sales</b>	<b>2810</b>	<b>2710</b>	<b>-100</b>
<b>Unmetered Sales</b>	<b>1626</b>	<b>1797</b>	<b>171</b>
<b>Grand Total</b>	<b>4436</b>	<b>4507</b>	<b>71</b>

- It is noted that there is an overall increase in sales by 71 MU as against the approved sales. There is a decrease in the metered sales by 100 MU and increase of 171 MU in the unmetered sales in comparison to the approved value. The decrease in metered sales indicates that the efficiency improvements proposed by the Commission have not been fully achieved. There is a reduction in sales to BJ/KJ & domestic categories and increase in sales to IP sets, HT water supply.

#### **b) Distribution loss & Energy Input**

- Commission had approved 5635 MU as input energy to MESCOM for FY04. As against this, the actuals as per MESCOM's annual report is 5697 MU. The Commission notes that there is a difference of 62 MU between the accounts and approved figures.
- Regarding distribution loss for FY04, the Commission had approved 21.28% as against the proposed loss of 24.04% by MESCOM in the Tariff Order 2003. The actuals as per the accounts is 20.87%. This indicates that the loss has actually decreased by 0.41% compared to the approved level.

3. One of the factors that affect the distribution loss is IP set consumption. In the Tariff Order 2003, the Commission estimated the IP set consumption for FY04 as follows vis-à-vis the figures projected by MESCOM as indicated below:

**Table-5.6**  
**IP Set consumption for FY04**

No. of IP sets (Mid year) as per monthly reports	Projection by MESCOM		Estimation by the Commission	
	Specific consumption	Total consumption in MU	Specific consumption	Total consumption in MU
328707	4077	1340	4280	1407

4. The above-assessed IP set consumption for FY04 had been worked out considering the quantum of restricted power supply during FY03.
5. The actual IP Set consumption [LT 4 a & b ] for FY04 as per the annual accounts is 1,606 MU and the year-end number of installations is 3,24,056. The specific consumption would be 5,005 units/IP set considering the FY 04 mid-year figure of 320856. Thus, the actual specific consumption has increased by 725-units/IP set and the total IP set consumption by 199 MU. Based on the figures furnished in the monthly reports, the specific consumption works out to 4,993 Units/IP/Year for FY04.
6. The cumulative effect of the above has resulted in decrease in actual distribution loss level as per the accounts as against the approved figure. The Commission notes that the metered sales have decreased by 3.6% and unmetered sales have increased by 10.5% as compared to the approved sales. The actual input has increased by 1.1% over



the approved input energy to MESCOM for FY04. This indicates that additional power purchase has been utilised to meet the demand from the unmetered categories. Further, the Commission notes that increased IP set consumption in FY04 has resulted in reduction of distribution loss in comparison to the approved figures.

**c) Review of Capital Investment Program**

1. In the Tariff Order 2003, the Commission had approved the Capital Investment Programme of MESCOM amounting to Rs.163.94 Crs. for FY04, which included APDRP works amounting to Rs.107.94 Crs. subject to detailed scheme-wise review and also subject to obtaining approval of the Commission for all the scheme reports of works costing more than Rs.1 crore.
2. MESCOM submitted Scheme Report in respect of APDRP works amounting to Rs.202.73 Crs. for the approval of the Commission in September 2003. The portion of the work proposed to be completed during 2003-04 was Rs.107.94 Crs. After review of the scheme report several clarifications were sought from MESCOM. In spite of the reminders, MESCOM failed to furnish the desired information. Hence the Scheme Report could not be approved.
3. It is noted that the actual expenditure incurred towards capital investments during FY04 is Rs.140.09 Crs. (as per audited accounts for FY 04) against an outlay of Rs. 163.94 Crs. approved by the Commission.
4. MESCOM is not furnishing quarterly progress report regularly in respect of works costing more than Rs.1 Crore as required under KERC guidelines. Further, MESCOM has also not furnished details of benefits accrued by completing various capital works especially those pertaining to APDRP works which are required to be furnished. The

Commission also notes that work award has been issued for certain works without obtaining the approval of the Commission.

#### d) Annual Revenue requirement

The Commission had approved a net annual revenue requirement of Rs. 1504.81 Crs. for FY04 as against the MESCOM's proposal of Rs. 1637.19 Crs. The Commission notes that the actual net expenditure for FY04 is Rs. 1535.78 Crs. The Comparison between actuals as per audited accounts and as approved by the Commission is indicated below:

**Table-5.7**

#### **ARR approved by the Commission and ARR as per actuals for FY04**

Particulars	Rs. Crs.		
	Expenses approved by KERC	Actuals as per audited accounts	Difference
<b>Expenditure</b>			
Power Purchase	1195.97	1235.58	39.61
Repairs & Maintenance	16.94	21.77	4.83
Employee Costs	161.21	168.11	6.90
A & G expenses	14.54	18.71	4.17
Depreciation	70.49	61.86	-8.63
Interest & Finance Charges	37.81	25.15	-12.66
<b>LESS:</b>			
Expenses Capitalised	0.003	0	-0.003
Other Charges/ (Debits)	0	8.75	8.75
Net prior period credits/(Debits)	0	0.54	0.54
Provision for taxation	0	1.33	1.33
Add: Return on NFA	13.07		-13.07
Total Expenses	1510.03	1541.80	31.77
Less other income	5.22	6.02	0.08
<b>Net ARR</b>	<b>1504.81</b>	<b>1535.78</b>	<b>30.97</b>

The variations in the expenditure are discussed below:

#### i) Power Purchase cost

The Commission in its Tariff Order 2003 had approved Rs.1195.97 Crs. as power purchase cost [with a BST of 193.57 paise per unit and Transmission tariff of 18.67 paise per unit] for an input energy requirement of MESCOM of 5635 MU. The actuals for FY04 as per audited accounts is Rs.1235.58 Crs. for an input of 5697 MU, indicating an increase in power purchase cost by Rs.39.61 Crs. an increase by 3.31%. The Commission notes that the increased cost in power purchase is on the following accounts:

- i. Increased quantum of power purchase by 62 MU
- ii. Revision of BST to 209.35 paise per unit effective from January 2004.

ii) Repairs & Maintenance

The approved R & M cost was Rs.16.94 Crs. The actuals as per audited accounts is Rs.21.77 Crs. resulting in increase of Rs.4.83 Crs. Major increases are in Plant & Machinery – Rs.2.22 Crs. and Lines, cables and network cost – Rs. 2.75 Crs. in comparison to FY04 ERC filing.

iii) Employee cost

In Tariff Order 2003, the Commission had approved Rs.161.21 Crs. as against Rs.167.17 Crs. proposed by MESCOM. The Commission had disallowed bonus of Rs.2.15 Crs. and Free electricity supply to employees of Rs.3.81 Crs. The actual employee cost as per audited accounts is Rs. 168.11 Crs. After excluding bonus of Rs. 2.08 Crs. as per accounts and Rs. 3.81 Crs. towards free electricity supply as per Tariff Order 2003, the employee cost would be Rs.162.22 Crs. indicating a marginal increase as compared to the approved expenditure.

iv) Administration & General expenses

The Commission had approved Rs.14.54 Crs. as A & G expenses [considering 10% increase over FY02 actual expenditure] as against

MESCOM's proposal of Rs.17.45 Crs. As per audited accounts the A & G expenses for FY04 is Rs.18.71 Crs. an increase of Rs.4.17 Crs. above the approved amount. Major variations in the expenditure are in Professional charges- Rs.1.38 Crs. increase and in respect of other expenses- Rs.1.52 Crs.

v) Depreciation

The Commission had approved an amount of Rs.70.49 Crs. as depreciation cost for FY04, which was based on the rates of depreciation as in the Gol notification. The depreciation as per audited accounts is Rs.61.86 Crs. resulting in savings of Rs.8.63 Crs.

vi) Interest & Finance charges

MESCOM had proposed Rs.37.81 Crs. as Interest & Finance charges for FY04, which the Commission had approved. The actual Interest & Finance charge as per audited accounts is Rs.25.15 Crs. indicating savings of Rs.12.66 Crs.

vii) Expenses Capitalised

The Commission had approved Rs.0.003 Crs. as expenses capitalised as proposed by MESCOM. In the annual accounts expenses capitalised are not separately indicated.

viii) Other debits and Net prior period charges and credits

MESCOM had not made any provision for the above expenses in FY04. However, the Commission notes that as per the audited accounts other charges/ (debits) is Rs.8.75 Crs. and Net prior period charges/(credits) is Rs.0.54 Crs.

ix) Provision for taxation

The Commission had not made any provision for taxation, as the same was not proposed by MESCOM. However, as per annual accounts an amount of Rs.1.33 Crs. has been provided for taxation.

## x) Reasonable return

The Commission had approved 3% on net fixed assets as reasonable return as proposed by MESCOM, which amounts to Rs.13.07 Crs. The Commission notes that the actual return as per annual accounts works out to Rs.14.91 Crs. indicating an increase of Rs.1.84 Crs.

**e) Gap of FY04**

1. The revenue surplus/(Gap) before subsidy as per Tariff Order 2003 and as per actuals are as follows:

**Table-5.8**

Particulars	Approved by KERC	Actuals as per audited accounts
Net ARR	1504.81	1535.78
Revenue from Sale of power	1292.06*	1310.46
Gap before subsidy	212.75	225.32

\* includes additional sales

2. After deducting the amounts not allowed by the Commission for pass through in the tariff i.e., a) Bonus to employees as per annual accounts: Rs.2.15 Crs. and b) Free /subsidised electricity to employees as per Tariff Order 2003: Rs.3.81 Crs. the actual ARR works out to Rs.1529.82 Crs. and the gap before subsidy would be Rs.219.36 Crs.
3. However, the Commission notes that as per audited accounts an amount of Rs.237.43 Crs. is shown as R.E. Subsidy from GoK, which includes return of 3% on NFA. Hence, the total surplus for FY04 after considering the subsidy from GoK works out to Rs.18.07 Crs.

**5.3.2 ERC for FY05:**

As discussed in Chapter-2 of this order, the Commission has not approved the ERC for FY05 of MESCOM. According to the provisional accounts of

MESCOM for FY05, there is no revenue gap after considering the Government subsidy of Rs.270.60 Crs.

### **5.3.3 ERC for FY06**

1. MESCOM filed its ERC for FY06 on 31.05.2005. The Commission analysed the same and preliminary observations were communicated vide Commission's letter dated 24.06.2005 and letter dated 11.07.2005 on the following:
  - a. To furnish the actuals for FY05.
  - b. Capital investments plan.
  - c. Sales Forecast.
  - d. Details of Slab-wise consumption
  - e. Prevention of Electrical Accidents.
  - f. Distribution losses
  - g. Cost of service
  - h. Various expenses covered under ARR for FY06 and
  - i. Tariff Schedule.
  
2. MESCOM has furnished replies to the observations on the above issues vide its letter dated 05.08.2005. Based on the ERC and replies furnished, the Commission has analysed the ERC and the same is discussed in the following paras.

#### **5.3.3.1 Sales Forecast**

MESCOM has generally adopted CAGR for projecting the number of installations and energy sales for metered categories in FY06. Wherever necessary, MESCOM has made corrections to account for changes in consumption pattern, energy availability etc. Regarding unmetered sales, MESCOM has projected the number of installations of BJ/KJ and IP sets based on likely new additions as per GoK policy & regularisation of IP Sets

and energy on specific consumption basis. For streetlights the energy is projected based on connected load. The validation of number of installations and energy sales as analysed by the Commission is discussed below:

### **Number of installations and Energy Sales**

#### **a. Metered Categories**

##### **i) LT2-a Domestic Lighting**

MESCOM had projected 23,00,331 installations for FY06 based on FY05 growth over FY04 of 2.58% in the original filing. Subsequent to validation by KERC, the growth rate is revised to 2.55% based on growth over FY04 with respect to provisional actuals for FY05. Hence, the year-end figures for FY06 as per MESCOM would be 2270442. The Commission notes that growth rate during the last three years has not been consistent due to conversion of BJ installations to lighting installations.

For energy sales, MESCOM has considered growth rate of 4.17% over FY05, based on the 3-year CAGR from FY-02 to FY-04. The actual growth in FY05 over FY04 is 5%. The growth rate of 4.17% proposed by MESCOM appears to be reasonable. Based on this growth rate, the revised energy sale of 1028 MU is estimated by MESCOM.

##### **ii) LT-3 Commercial Lighting**

MESCOM has projected the number of installations at the growth rate of 2.8% based on the growth in FY05 over FY04. The Commission notes that the three year CAGR and five year CAGR for this category is 3% and 2.8% respectively. Hence the growth rate considered is reasonable. Based on this growth rate and considering the provisional actuals for FY05 the year end figure works put to 255333 installations, as against MESCOM's projection of 251845 installations.

For projecting the sales MESCOM has considered CAGR of 8.31% between FY03 to FY04. The Commission notes that the 5-year CAGR between FY01 to FY05 is 8.9%. Hence the growth rate considered is reasonable. Based on this growth rate and considering the provisional actuals for FY05 the sales for FY06 works out to 209 MU, as estimated by MESCOM, in its revised filing.

iii) LT-5: LT Industries

There is a negative growth from FY01 to FY04 and for FY05 there is a marginal increase. MESCOM had originally proposed 39098 installations for both FY05 and FY06. Based on the provisional actuals for FY05 MESCOM has revised the number of installations for FY05 as 38895 and the same number has been retained for FY06 assuming that the number of additions would be equal to number of disconnections.

The Commission notes that except in FY05, there is negative growth year on year in sales from FY01 to FY04. Revised energy sales of 221.31 MU has been proposed by MESCOM.

iv) LT6 a (i) Water Supply Rural

MESCOM has proposed a growth rate of 7.9% for this category, which appears to be reasonable. Based on this growth rate, the number of installations for FY06 would be 18409 installations, as against MESCOM's estimate of 17735 installations.

v) LT6 b (i) Water Supply Urban

There is inconsistent growth over the last 5 years in the number of installations. MESCOM has proposed addition of 782 installations during FY06. Therefore the total number of installations for FY06 would be 3494 considering the actual for FY05, as against MESCOM's estimate of 3048 installations.



The total number of installations under water supply (both Urban & Rural) would be 21903.

Regarding energy sales, based on the information furnished by MESCOM, the growth rate would be 12.21% (both Urban & Rural). Based on 3 year CAGR, the growth is around 11%. The growth rate of MESCOM is reasonable and the sales in FY06 would be 170 MU, as against MESCOM's revised estimate of 158.74 MU.

vi) HT Category

MESCOM's projections of installations for all HT categories are based on pending applications and installations likely to be serviced during the year. This approach is reasonable.

HT sales is discussed in the following paragraphs:

vii) HT-1 HT Water Supply

MESCOM has considered 6.74% [revised from 6.7% after validation] growth based on the previous year growth rate. The Commission notes that year on year the growth rate is not consistent and hence the proposed growth rate is reasonable.

viii) HT-2a HT Industries

MESCOM has considered 10.4% growth rate [revised from 11.38% after validation] . The Commission notes that 3 year CAGR is around 10.5% and in the last two years the year on year growth rate is in the range of 8% to 12%. Hence the proposed growth rate of 10.4% is reasonable and sales for FY06 considering the FY05 actuals would be 1039 MU as against the MESCOM revised sales of 952 MU.

ix) HT-2b HT Commercial

MESCOM has stated that it has considered 7.63% growth rate [revised from 12.86% after validation]. However from the revised D-2 format the

Commission notes that MESCOM has applied 8.2% growth rate, which is the actual growth rate in FY05 over FY04. Since the growth rate over the past 5-years is inconsistent, the assumption of 8.2% growth is reasonable and sales for FY06 considering the FY05 actuals would be 130 MU as revised by MESCOM.

x) HT-4 Residential

MESCOM has stated that it has considered 93.44% growth rate [revised from 54.63% after validation]. However from the revised D-2 format the Commission notes that MESCOM has applied 6% growth over FY 05 sales. Since there is inconsistent growth in this category, the sales of 34 MU as revised by MESCOM is reasonable.

MESCOM had initially projected 26,27,391 installations and sales of 3090 MU to metered category. Subsequently MESCOM has revised the numbers to 25,97,384 & sales of 3050 MU. However, MESCOM has not revised the D-21 Format incorporating the revised figures. This indicates lack of seriousness in filling the correct information. Hence, Commission is constrained to adopt the original figures for metered installations and for metered sales.

**b. Unmetered Categories**

i) LT-1 BJ/KJ

MESCOM had projected 2,24,817 installations for both FY05 and FY06 in the initial filing. Subsequent to validation by the Commission, MESCOM has revised these figures to 2,16,737 for FY05 and 259237 for FY06. While projecting the numbers for FY06, MESCOM in their original filing had considered net additions of 5000 installations in FY05 and zero in FY06. Subsequently, the FY05 numbers have been revised based on actuals. For FY06 it has been revised to 259237 by MESCOM, stating that the above revised target has been as per directions of GoK.

Commission notes that as per GoK's target, 1 lakh installations are to be serviced during FY06. As stated by MESCOM the number of installations getting converted to LT-2a category would be 15,000. Hence, the net additions in FY06 would be 85,000. Considering the actuals for FY05, the installations at the end of FY06 would be 301737. The mid year number of installations would be 259237.

Based on the mid-year number of installations for FY06, & 18 units per installation per month the energy sales for FY06 would be 56 MU as against 77 MU proposed by MESCOM, in revised filing.

ii) LT4-a&b Irrigation pump sets

The MESCOM has estimated the mid year figures for installations as 335982 and the sales to this category in FY06 as 1593.59 MU, resulting in specific consumption of 4743 units/IP/Yr.

However, based on the monthly reports furnished by the MESCOM for FY05, the Commission has estimated the specific consumption as 4750 units per IP/Yr. Hence, the sale to this category in FY06 has been estimated by the Commission as 1640 MU.

iii) LT6a (ii) Street Lights Rural

There is inconsistent growth over the last 5 years in number of installations. MESCOM has projected 13948 installations.

iv) LT6 b (ii) Street Lights Urban

There is inconsistent growth over the last 5 years in number of installations. MESCOM has revised the number of installations from 3560 to 4208 based on provisional actuals.

The total number of installations under streetlights (both Urban & Rural) would be 18156.

MESCOM has revised the sales from 146 MU to 189 MU (both Urban & Rural). Based on 12 hrs of burning per day as directed by the Commission, the sales would be 185 MU as against 189 MU proposed by MESCOM, in its revised filing.

The Commission notes that there is wide variation in number of un-metered installations and un-metered energy sales as proposed by MESCOM and as worked out by the Commission. Hence, the Commission would adopt its own figures for the number of installations and energy sales to un-metered Categories.

Based on the above discussion, the Commission approves the number of installations and energy sales for MESCOM for FY06 as indicated in the Table below. However, the Commission directs MESCOM to note the observations made by the Commission on sales forecast for future guidance.

**Table-5.9**  
**Sales Estimates for FY06**

Category	Type of Installation	As Proposed		As approved	
		No. of Consumers	Energy Sales MU	No. of Consumers	Energy Sales MU
LT-1(a)	Bhagya Jyothi	224817	48.56	301737	55.99
LT-2(a)	Domestic Lighting /AEH	2300331	1027.79	2300331	1027.79
LT-2(b)	Private Prof. & Edl Institutions	3126	6.35	3126	6.35
LT-3	LT Commercial	255620	206.57	255620	206.57
LT-4 (a) & (b)	Irrigation pump sets - less than 10 HP	355557	1676.48	370310	1640.16
LT-4 (c)	IP sets more than 10 HP	368	1.77	368	1.77
LT-4(d)	Private Horticulture nurseries, Coffee & Tea plantations	4460	3.96	4460	3.96
LT-5	LT Industries	39098	212.40	39098	212.40
LT-6 (a) & (b)	Water Supply	22691	172.39	22691	172.39
LT-6 (a) & (b)	Street Lights	17719	146.15	18156	185.00
LT-7	Temporary Power	5119	6.71	5119	6.71

Category	Type of Installation	As Proposed		As approved	
	Supply				
	<b>LT Total</b>	<b>3228906</b>	<b>3509.13</b>	<b>3321016</b>	<b>3519.09</b>
HT-1	HT Water Supply	81	313.74	81	313.74
HT-2(a)	HT Industries	511	944.13	511	944.13
HT-2(b)	HT Commercial	626	141.37	626	141.37
HT-3 (a) & (b)	HT Irrigation & LI Societies	40	1.69	40	1.69
HT-4	HT Residential	105	50.72	105	50.72
	<b>HT Total</b>	<b>1363</b>	<b>1451.65</b>	<b>1363</b>	<b>1451.65</b>
	<b>Metered Category</b>	<b>2632176</b>	<b>3089.59</b>	<b>2632176</b>	<b>3089.59</b>
	<b>Unmetered Category</b>	<b>598093</b>	<b>1871.19</b>	<b>690203</b>	<b>1881.15</b>
	<b>Total</b>	<b>3230269</b>	<b>4960.78</b>	<b>3322379</b>	<b>4970.74</b>

### 5.3.3.2 Distribution Loss & Energy Input

#### 1. Assessment of IP Set Consumption

Estimation of IP set consumption is a key factor, which determines the distribution loss levels. Hence, it is worthwhile to discuss the approach taken by the Commission in determining the IP set Consumption in the previous order before arriving at the Consumption for FY06. IP set consumption for FY 04 has already been discussed earlier. IP set consumption for FY05 and FY06 is discussed below.

#### a) IP set consumption for FY 05

1. MESCOM has estimated the year-end figures of LT4-a & b installations for FY05 as 320310 and the energy sales as 1550.75 MU based on actuals for FY05.
2. As per the monthly reports furnished by MESCOM, mid-year figure of installations would be 324609 and the energy consumption is 1542 MU. Hence, the specific consumption in FY05 would be 4750 units per IP/Year.
3. The Commission vide its letter No. T/01/2003/1839 dated 04.11.2003 has informed the ESCOMs that the figures furnished in the monthly reports in respect of IP sets would form the basis for estimating the

IP set consumption. Hence, Commission adopts 4750 units/IP/Yr. as the specific consumption for estimating IP set Consumption in FY06.

b) IP set consumption for FY 06

1. The MESCOM has projected a year-end figure of 370310 installations in the ERC for FY06. While arriving at the said number it is stated that during FY06, 50,000 installations would be serviced during the year. (25,000 due to regularisation of un-authorized IP sets and 25000 new connections).
2. The Commission notes that as per the gist of the discussions in the meeting with the Hon'ble Minister for Power on 20.04.2005, issued by the MD, KPTCL vide note dated 23.04.2005, the target for new IP installations for MESCOM is 25000. Considering this number and the proposed regularisation of 25,000 unauthorised IP sets, the total additions during FY06 would be 50,000. Hence, the Year-end figure of IP sets for FY06 works out to 370310 and the mid-year figure for FY 06 would be 345310.
3. For the reasons stated earlier, the Commission would adopt the specific consumption of 4750 units/IP/year of FY05 to arrive at the IP- consumption for FY06. Hence, the energy sales to IP-sets for FY06 would be 1640 MU.

## **2. Distribution Loss**

The loss level for FY04 has already been discussed earlier. The loss for FY05 & FY06 is discussed in the foregoing paragraphs.

a) Loss for FY 05

As per the ERC filing the input energy to the MESCOM inclusive of EHT sales is 5900 MU. This has been revised to 5992 MU by KPTCL vide their letter

dated 27.08.2005. The total sales for FY05 as per the filing are 4705 MU [Revised]. The distribution loss works out to 21.48% for FY05 considering the input as furnished by KPTCL.

b) Loss for FY 06

1. In the ERC filing for FY 06 MESCOM had projected the energy input including EHT sales at 6220 MU and total sales of 4960 MU. The distribution loss works out to 20.24%. Subsequently MESCOM has revised the energy input including EHT sales as 6448 MU, without revision in energy sales. Thus revised distribution loss works out to 23.07%, higher than originally estimated MESCOM has not furnished satisfactory reasons for this increased losses.
2. The Commission in its Tariff Order 2003 had fixed 21.28% as the allowable distribution loss for FY04. The Commission notes that the actual loss in FY04 was 20.87% as per annual accounts and in FY05 it was 21.48% [revised] as per ERC filing. The Commission notes that the loss level has marginally decreased in FY04 below the approved figure and has increased in FY05.
3. In this context, MESCOM is better placed, in comparison to HESCOM or GESCOM. Hence, the allowable loss level for MESCOM cannot be more than 21.28% as already approved for FY04. It is worthwhile here to mention about the losses in 11 towns/cities being monitored by the Commission. The losses in these 11 towns/cities is indicated below:

**Table-5.10**

**Loss in 11 towns/cities of MESCOM in FY 05**

<b>Particulars</b>	<b>11 Towns</b>	<b>MESCOM excluding 11 Towns</b>	<b>MESCOM- Total</b>
<b>Input energy-MU</b>	911.50	5080.24	5991.74
<b>Loss- MU</b>	113.63	1173.13	1286.76
<b>% Loss to Input</b>	12.47	23.09	21.48

4. It is noted that the loss level in MESCOM excluding the 11 towns is high indicating that there is substantial commercial losses, which can be reduced by better management. Hence, MESCOM through better management, apart from the Capex proposed for FY06, can achieve the target loss of 20.50% in FY06.
5. In view of the above, the Commission hereby allows 20.50 % as the loss for MESCOM in FY06.
6. In the Tariff Order 2003, the Commission has stated that the true indicator of distribution loss is to reckon the same as a percentage of the input energy without including the EHT sales. The allowable distribution loss levels however have been expressed as a percentage of input energy sales inclusive of EHT sales. The distribution loss expressed as percentage of Input inclusive and exclusive of EHT sales for FY 04 & FY 05 are indicated hereunder:

**Table-5.11**  
**Distribution loss levels**

Year	Input energy inclusive of EHT sales in MU	EHT sales in MU	Input energy excluding the EHT sales in MU	Total sales including EHT sales in MU	Total sales excluding EHT sales in MU	Distribution loss as a percentage of input energy inclusive of EHT sales in %	Distribution loss as a percentage of input energy exclusive of EHT sales in %
FY 04 as per annual accounts	5697	749*	4948	4508	3759	20.87	24.03
FY 05 as per ERC filing	5992	798*	5194	4705	3907	21.48	24.78
FY 06 as per KERC	6264	747	5517	4980**	4233	20.50	23.27

\* EHT sales as per ERC filing

\*\* Includes additional sales



### 3. Energy Input for FY 06

MESCOM has estimated initially an energy input of 6220 MU, which has been revised to 6448 MU. The Commission has approved energy input of 6264 MU. Based on the approved energy input & allowable loss level of 20.50%, the sales to be achieved by MESCOM would be 4980 MU.

#### 5.3.3.3 Capital Investment programme for FY06

1. MESCOM has proposed a capital investment Programme amounting to Rs.360.50 Crs. during FY06. It is however noted that no provision has been made in the Investment Plan for FY06 towards preventive measures to reduce accidents. Further, the Commission had observed that, to comply with provisions of EA 2003, no adequate provision for metering is made in the investment programme for providing meters to all the installations. The Commission sought various clarifications on investment program of MESCOM.
2. MESCOM has clarified that preventive measures for reduction of accidents are covered under E& I works for which a provision of Rs.60 Crs. has been made. For metering MESCOM has made a provision of Rs.15 Crs. in FY06.

The scheme wise capital investment for FY 06 is as indicated below:

**Table-5.12**

**Scheme-wise allocation of Capital Investment programme proposed by MESCOM for FY06**

Sl. No.	Scheme	Rs. crores
<b>1.</b>	<b>SYSTEM AUGMENTATION &amp; STRENGTHENING</b>	
<b>A.</b>	Extension & Improvement	60.00
<b>B.</b>	ATL works(infrastructure works)	10.00
<b>C.</b>	Accelerated Power Development & Reform Programme	49.00
<b>D.</b>	Replacement of faulty distribution transformers	4.00

Sl. No.	Scheme	Rs. crores
<b>E</b>	Service Connection	30.00
	<b>Sub-Total</b>	<b>153.0</b>
<b>2.</b>	<b>RURAL ELECTRIFICATION (GENERAL)</b>	
<b>A.</b>	Electrification of Hamlets	8.00
<b>B.</b>	Energisation of IP sets	102.00
<b>C.</b>	Kutir Jyothi	0.50
<b>D.</b>	Grama Jyothi	50.00
	<b>Sub-Total</b>	<b>160.50</b>
<b>3.</b>	<b>TRIBAL SUB-PLAN</b>	
<b>A.</b>	Electrification of Hamlets	0.50
<b>B.</b>	Energisation of IP sets	3.50
<b>C.</b>	Kutir Jyothi	0.50
	<b>Sub-Total</b>	<b>4.50</b>
<b>4.</b>	<b>SPECIAL COMPONENT PLAN</b>	
<b>A.</b>	Electrification of HB/JC/Tandas	1.50
<b>B.</b>	Energisation of IP sets	9.00
<b>C.</b>	Kutir Jyothi	0.50
	<b>Sub-Total</b>	<b>11.00</b>
<b>5.</b>	Tools & Plants and computers	3.00
<b>6.</b>	Civil Engineering Works	3.50
<b>7.</b>	Metering	15.00
<b>10.</b>	Augmentation of existing and Construction Of New 33 KV Sub-Stations & Lines and 33 KV stations and lines	10.00
	<b>GRAND TOTAL</b>	<b>360.50</b>

3. The Commission approves the above capital investment programme of Rs.360.50 Crs. for FY06 subject to MESCOM furnishing the scheme wise reports of all works including APDRP works costing more than Rs.1 Crore for the approval of the Commission as per the practice directions issued by the Commission.

#### 5.3.3.4 Power Purchase Cost

1. MESCOM has projected power purchase cost (including transmission charges) of Rs.1624 Crs. for an energy input at interface points of 6448 MU. The per unit power purchase cost works out to 251.86 paise.

2. In terms of Section 39 (1) of EA 2003, KPTCL is barred from trading in electricity with effect from 10.06.2005. Accordingly GoK vide order No. EN 131 PSR 2003 dated 10.05.2005 has accorded approval to ESCOMs to purchase power from various generating Companies. Allocation of power supplied by KPCL, VVNL, CGS and Conventional IPPs is on the basis of total energy consumption during the year FY05. NCE projects have been allocated to ESCOMs based on geographical location of the project.
3. The Commission had directed KPTCL to work out the ESCOM wise requirement of power purchases for FY06 based on the above GO. Accordingly, KPTCL has worked out ESCOM wise energy input for FY06.
4. Based on KPTCL working the input energy to MESCOM would be 6220.
5. The Commission approves power purchase quantity of 6264 MU at cost of Rs.1280.28 Crs. as discussed in Chapter-3.
6. The transmission charges for MESCOM for FY 06 at 19.42 paise per unit would be Rs.121.65 Crs.

#### **5.3.3.5 Repairs and Maintenance expenses**

1. MESCOM has proposed Rs.18.57 Crs. [revised] as R & M expenses for FY06. The expenditure for FY05 as per provisional actuals is Rs.16.88 Crs. indicating an increase of R & M expenses by 10.0%. The previous growth rate over FY04 was 22.5%. MESCOM has not justified the increase.
2. In the previous tariff order the Commission had approved an increase of 10% over FY03 expenses. Keeping this in view and also knowing that prudent R & M expenses would result in reduced number of interruptions and reduced failure rates of transformers., the Commission considers 10% increase over FY05 as reasonable. Hence,

the Commission approves Rs.18.57 Crs. as the allowable R & M expenses for FY06.

#### **5.3.3.6 Employee Cost**

1. Employee cost of Rs.176.50 Crs. [revised] is proposed for FY06 by MESCOM. This indicates a decrease of 2.2% over FY05 employee cost of Rs.180.47 Crs. as per provisional accounts.
2. The number of employees working in FY06 is estimated by MESCOM as 7801 as against 7895 in FY05 indicating a decrease of 94 employees in MESCOM. Consequent to this, MESCOM has made 2.8% reduction in salaries over FY05 provisional actuals.
3. MESCOM has computed DA as 70% of basic salaries on the basis of time weighted average.
4. MESCOM has estimated Rs.24.54 Crs. as terminal benefit based on 19.06% of Basic & DA and 2.36% on basic as gratuity.
5. Further, MESCOM has stated that expected wage revision of employees is not accounted.
6. The proposed amount of Rs.176.50 Crs. as employee cost is less than provisional actuals of Rs.180.47 Crs. in FY05 [-2.2%]. However, as decided in the earlier Tariff Orders, the Commission will disallow bonus of Rs. 1.95 Crs. and cost of free/subsidised electricity to employees of Rs.3.81 Crs. [as per tariff order 2003] for FY06 also. After disallowing the above expenses, the allowable employee cost would be Rs.170.74 Crs.

#### **5.3.3.7 A & G expenses**

MESCOM has proposed Rs.27.23 Crs. as A & G expenses, which is 5.05% higher than FY05 provisional actuals. The Commission considers this

increase over FY05 actuals as reasonable. Hence, the Commission approves A & G expenses for FY06 of Rs.27.23 Crs.

#### **5.3.3.8 Depreciation**

Rs.82.98 Crs. has been provided as depreciation for FY06 by MESCOM on the basis of rate prescribed by Gol notification of 1994. The Commission approves provision of Rs.82.98 Crs. towards depreciation.

#### **5.3.3.9 Interest & Finance Charges**

MESCOM had proposed Rs.31.76 Crs. initially and subsequently revised to Rs.33.40 Crs. MESCOM has revised the amount being drawn from different sources, resulting in the increase. The Commission approves the revised estimate of Rs.33.40 Crs.

#### **5.3.3.10 Other Charges/Debits**

1. A sum of Rs.8.08 Crs. has been proposed under this head towards provision for bad/doubtful debts, miscellaneous and others.
2. In tariff order 2002, the Commission has stated that bad & doubtful debts on adhoc basis would not be considered. In the original filing, a provision of Rs.3.06 Crs. for bad & doubtful debts was made by MESCOM which has been subsequently revised to Rs.0.18 Crs. by providing Rs.3.11 Crs. as Miscellaneous losses and write-offs. No explanation/details in this regard have been furnished. Hence, the Commission disallows Rs. 3.29 Crs. and approves Rs.4.79 Crs. towards other debits.

#### **5.3.3.11 Expenses Capitalised**

MESCOM has not proposed any amount under this head.

#### **5.3.3.12 Net Prior period charges & Credits**

A provision of Rs.1.69 Crs. has been made for FY06. The Commission accepts the estimate of MESCOM.

**5.3.3.13 Provision for tax**

MESCOM has not made any provision for tax in its filing. However, a sum of Rs.1.40 Crs. as provision for tax for FY06 has been indicated in P & L account while furnishing replies to Commission's observation. The Commission accepts this provision.

**5.3.3.14 Reasonable return**

1. The Commission had allowed RoR at 3% on NFA to the ESCOMs in the earlier years, since section 27 of KER Act 1999 stipulated that the provisions of Electricity (Supply) Act 1948 applies in the case of Board or its successor entities for determination of revenue of the licensees and further that GoK had stipulated 3% RoR in respect of erstwhile KEB.
2. With the enactment of Electricity Act 2003, the Electricity (Supply) Act 1948 has been repealed, save otherwise provided in EA 2003. As per section 61 of the Electricity Act 2003, the Commission shall specify the terms and conditions of tariff and in doing so the Commission shall be guided by, amongst others, the principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees.
3. Further as per the draft Tariff Policy dated 16.03.2005 issued by the Ministry of Power, Gol, the rate of return on equity for generation and transmission projects as notified by the Central Commission would be adopted by the SERCs for distribution. However, as discussed in Chapter-3 of this order, these aspects will be further examined by the Commission while specifying the terms and conditions for determination of tariff under section 61 of the EA 2003, after the National tariff Policy is notified by the Gol. The Commission has allowed 12% Return on Equity (RoE) to KPTCL. On the same lines the Commission has decided to allow 12% Return on Equity (RoE)

(including reserves) amounting to Rs.20.87 Crs. as against MESCOM's proposal of 3% RoR at Rs.16.86 Crs.

### 5.3.3.15 Other Income

MESCOM has indicated Rs.6.04 Crs. as Other Income from trading, soft loans to employees and miscellaneous receipt. The Commission approves the estimate of MESCOM.

### 5.3.3.16 Annual Revenue Requirement

Based on the above discussions a summary of the ARR proposed by HESCOM and approved by the Commission is as under:

**Table-5.13**

**ARR proposed by MESCOM & as approved by KERC**

<b>Particulars</b>	<b>Proposed by MESCOM</b>	<b>Approved by KERC</b>
<b>Expenditure</b>		
Power Purchase	1624.07	1280.28
Transmission Charge		121.65
Repairs & Maintenance	18.57	18.57
Employee Costs	176.50	170.74
A & G expenses	27.23	27.23
Depreciation	82.98	82.98
Interest & Finance Charges	33.40	33.40
<b>LESS:</b> Expenses Capitalised	0	
Other Charges/ Debits	8.08	4.79
Net prior period credits/Debits	1.69	1.69
Add: Provision for taxation	1.40	1.40
Add: Return equity 12%	16.86	20.87
<b>Total Expenses</b>	<b>1990.78</b>	<b>1763.60</b>
Less: other income	6.04	6.04
<b>Net ARR</b>	<b>1984.74</b>	<b>1757.56</b>

### 5.3.3.17 Average Coast of Supply

Considering the proposed ARR of Rs.1984.74 Crs. MESCOM has worked out the average cost of supply for FY06 as 400.00 paise per unit. However, after considering the ARR and sales as allowed by the Commission, the average cost of supply would be 353.63 as worked out below:

**Table-5.14**

#### **Average Cost of Supply**

<b>Particulars</b>	<b>Proposed by MESCOM</b>	<b>Approved by KERC</b>
<b>Net ARR (Rs crores)</b>	<b>1984.74</b>	<b>1757.56</b>
Sales –MU	4961	4970
<b>Average cost of Supply Paise per unit (Paise per unit)</b>	<b>400.00</b>	<b>353.63</b>

### 5.3.3.18 Revenue from Existing Tariff

1. The Commission has pointed out the discrepancies in the revenue estimates made by MESCOM during validation. In the absence of any further credible information, the Commission accepts the revised revenue estimates of MESCOM at existing tariff of Rs.1522.70 Crs.
2. The Commission notes that revenue estimation is an important exercise in the whole ERC estimation. In the earlier Tariff Orders the Commission has mentioned about the necessity for developing a systematic approach towards revenue estimation by adopting a robust sampling procedure. The Commission once again reiterates that a systematic approach needs to be adopted by MESCOM for realistically forecasting the revenue in next filings.

### 5.3.3.19 Revenue Gap for FY06

The revenue gap for MESCOM with existing tariff is given below;



**Table-5.15**  
**Revenue Gap at existing tariff in MESCOM for FY06**

(Rs crores)

<b>Particulars</b>	<b>As per ERC filing of MESCOM</b>	<b>As approved by KERC</b>
Total expenditure including return	1990.78	1763.60
LESS : Other income	6.04	6.04
Net revenue requirement	1984.74	1757.56
Revenue from sale of power (net of rural rebate)	1522.70	1522.70
Surplus/(Deficit) before subsidy	-462.04	-234.86

The revenue gap of MESCOM in FY06 at the existing tariff, before Government subsidy is estimated to be Rs.234.86 crores. However, considering an additional sales of 9 MU, there would be a marginal addition to the revenue by Rs.3.26 Crs.